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### Eating disorders in men – epidemiology, determinants and treatment. A narrative review of empirical evidence

**Abstract:** The paper examines the issues of epidemiology, conditions, and treatment of eating disorders in men which are not widely recognised in either Polish and other International research. The aim of this paper is to provide an narrative overview of published research to date on the epidemiology, determinants and treatment of eating disorders in males, to discuss some of the differences reported in studies of self-identified gender disparities, and differences in comparison to the literature on female eating disorders. The prevalence and extent of the issue is underestimated by those affected and by clinicians. Consequently, men suffering from eating disorders (EDs) are less likely to be recognised or to receive appropriated timely help.

This paper is based on a narrative review analysis of research reports on EDs. The authors discuss the issue of EDs in the context of gender, indicating how self-identified gender can affect clinical presentation (including somatic self-perception, and the methods employed and motives in striving for a 'perfect' figure) and how these relate.

Both the methods used in collecting data on eating disorders and the precision of diagnostic criteria for recognising eating disorders (mainly anorexia nervosa and bulimia nervosa) (both on the DSM and ICD systems) are based largely on research conducted in female clinical populations. Analysis of the empirical material to date leads us to assume that symptoms of EDs in men are more often (than in the case of women) related to (self)stigmatisation, difficulties in obtaining a correct diagnosis, coexistent body dysmorphic disorders, substance addictions, and greater physical activity.'

**Keywords:** eating disorders in men, gender, culture, (self)stigmatization, physical activity

#### INTRODUCTION

Streigel-Moore and Bulik (2007) believe that the most important risk factor for the development of *eating disorders* (ED) is a female gender. The current inadequate knowledge of ED in the male population probably results from the fact that due to their apparent rarity they have been largely excluded from epidemiological studies (Murray, Griffiths, Mond, 2016; Nagata, Griffiths, Calzo, Brown, Mitchison, Blashillh, Mond, 2017). Despite the descriptions of cases of male anorexia as early as in 16<sup>th</sup> and 17<sup>th</sup> centuries, they were not included in studies until 1972 (Beaumont, Beardwood, Russell, 1972), thus being excluded from most of the empirical projects that ultimately led to the development of diagnostic criteria and treatment programs for eating disorders (Lavander, Brown, Murray, 2017). Murray, Griffiths and Mond (2016) report that only less than 1% of studies on *anorexia nervosa* have so far been conducted in the male

population. It was also noted that between 1999 and 2009 the number of men hospitalized for eating disorders and their consequences increased by 53% in the USA. These data are the result of the research project carried out by the Healthcare Cost and Utilization Project (HCUP) on the subject of estimating the number of people hospitalised due to eating disorders (Zhao, Encinosa, 2011). Thus, on one hand, researchers dealing with this problem claim that eating disorders are rare among men, while at the same time admitting that the subject of their empirical interest is primarily women.

This paper is based on the data collected during the narrative review procedure (Wiles, Pain, Crow, 2010; Ferrari 2015; Nakano, Muniz 2018). For the narrative review, forty texts from the databases [Google Scholar, Research Gate, Scirus (Elsevier Publishers), Cite Seer and get CITED] were analysed, following keywords such as: eating disorders in women and man, eating disorder epidemiology, eating disorder diagnosis, gender

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differences in eating disorder. The research reports conducted in the last decade was taken under consideration, although for some topics, the authors used older ones, in the absence of reports from the last decade. The analysis is of an exploratory nature and is the first stage of our research on this phenomenon, and therefore additional selection criteria (e.g. age, place of residence, sexual orientation, etc.) were not taken into account. Despite the fact that the narrative review has no predetermined research questions and strategy (Demiris, et al., 2019), the authors of the text have set themselves three objectives:

- (1) exploring the nature of eating disorder in men and women,
- (2) determining the frequencies of EDs in men and women,
- (3) presenting the diagnosis of EDs in men and women (including research methodology, especially sampling, as an independent variable, seeking for treatment).

### EPIDEMIOLOGY OF EATING DISORDERS IN MEN

The relationship between the categories of gender and mental health is confirmed by both international quantitative epidemiological data and qualitative clinical observations. It appears that particular mental disorders are significantly more frequently diagnosed either in women or in men. What is more, there are differences in the clinical outcome of some mental disorders (e.g. depression or addiction) depending on the gender of patients (Renzetti, Curran 2008, p. 507-579; Rogers, Pilgrim 2010, p. 68-87). Thus, diseases whose clinical picture reflects traditional patterns of femininity are significantly more frequently diagnosed in the female population, whereas diseases and disorders whose symptoms resemble patterns of masculinity – in men (Kiejna, 2013). Diseases diagnosed much more frequently in women (Brannon, 2002, p.466-504; Russo, Green, 2002, p. 303-343; Curran, Renzetti, 2008, p. 548-575; WHO, 2011a) include: depression, anxiety disorders, personality disorders including avoidant, dependent (symbiotic), histrionic, and borderline (unstable) personality and eating disorders (*anorexia* and *bulimia nervosa*). In men, on the other hand, more common are addictions to psychoactive substances, and such personality disorders as: anti-social, narcissistic, schizoid, paranoid and obsessive-compulsive.

The prevalence of ED in the male population in general is certainly much higher than the prevalence of the eating disorders being treated, which may be due to the fact that, firstly, men are less interested in the treatment of such problems and reveal them less openly. They also have less knowledge of ED and have less insight into the development of the disorder (Maine, Bunnell, 2010). Secondly, to clinicians, eating disorders in men seem so unlikely that they are difficult to diagnose (Weltzin, Weisensel, Burnett, Klitz, Bean, 2005; Murray et al., 2016). In diagnosing a male patient revealing problems in the sphere of food, the specialists often assume that they are caused by somatic diseases (e.g. food intolerance,

Leśniowski-Crohn syndrome) or mental disorders (e.g. depressive, anxiety) rather than eating disorders. This situation results e.g. from using a diagnostic classification scheme and tools for ED diagnosis developed primarily for women (Murray et al., 2016). However, it turns out that "standard tools for the detection of ED in women for unexplained reasons do not yield results in the diagnosis of men" (Maine, Bunnell, 2010, p. 328). This may be because the classical questionnaires for the diagnosis of ED include questions/statements about e.g. female motives for (non) eating and the conditions of eating disorders, the importance of which concerning the development of ED has been confirmed in studies on the female part of the population.

Currently the incidence of *anorexia nervosa* (AN) among men is on the rise and the ratio between women and men has changed from 9:1 to 4:1 over the last 20 years (Keski-Rahkonen, Hoek, Susser, Linna, Sihvola, Raevuori, Rissanen, 2007). Stice and Bohon (2012), having analyzed and integrated information from various sources, indicated that the rate is between 0.9% and 2.0% in the female population, and between 0.1% and 0.3% in the male population. According to Mond et al. (2014; cf. Valente, Di Girolamo, Forlani, Biondini, Scudellari, De Ronchi, Atti, 2017), men make up 25% of all *anorexia nervosa* cases.

Some researchers assess the risk of death from AN and its complications as irrelevant to gender, and consider it ten times higher in people with *anorexia nervosa* than in their healthy peers between the ages of 15 and 24 (Smink, van Hoeken, Hoek, 2012). Others (Mond et al., 2014) claim that men with AN, are at higher risk of premature death compared to women, because in their case the disorder is diagnosed much later than in women. Thus, at the moment of diagnosis, the symptoms are more persistent, complications are more severe and the prognosis is worse, for example on average eating disorders are diagnosed between 18 and 26 years of age in men, while among women it is between 15 and 18; (Krenn, 2003).

Jaworski et al. (2019) have undertaken to estimate the incidence of ED frequency in men in Poland. Researchers proved that *anorexia nervosa* affected about 100 men between 11 and 30 years of age in each year of observation, i.e. from 2010 to 2017. Meanwhile, its atypical form was noted in about 40 of them. In the same study *bulimia nervosa* (BN) were diagnosed in about 35 men each year. It should be added that the authors conducted their research only in the population of people who reported for assistance to various institutions, as a part of the National Health Fund.

Epidemiological data on *bulimia nervosa* indicate that 1.5% of women and 0.5% of men suffer from this disorder (Hudson, Hiripi, Pope, Kessler, 2007). On the other hand, Stice and Bohon (2012), analyzing the reports of various researchers on the incidence of bulimia and *binge eating disorder* (BED) show that bulimia occurs in 1.1% to 4.6% of women and 0.1% to 0.5% of men, and *binge eating disorder* in up to 3.5% of the female population and 2% of the male population. According to Westerberg and Waitz

(2013), about 40% of people with binge eating disorder are men. However, Bunell (2010) claims that *bulimia nervosa* is commonly underdiagnosed in men and regarded as a "big appetite", which is considered normal for this sex. Studies show (Wisting, Bang, Rø, 2015), that 1/3 of women and 1/6 of men with type 1 diabetes mellitus manifest symptoms of eating disorders, and at the same time reduce or skip insulin doses as a weight control strategy (*diabulimia*). Other forms of abnormal eating behavior (including overeating, cleansing, laxative abuse and fasting for weight loss) are almost as common in men as in women (Mond et al., 2014). It has also been proven that eating disorder rates are rising faster in the male population (Lavender et al., 2017).

In conclusion, while epidemiological data clearly indicate a higher prevalence of ED in the female population, those relating to the male part of the population should be treated with caution. As it has been shown, men are less likely to seek help, and the diagnostic tools and specialist knowledge of ED diagnosis in the group are still imperfect.

### CLINICAL SYMPTOMS AND CONDITIONS OF ED IN MEN

Although the same diagnostic criteria are used to diagnose ED regardless of the patient's sex, it seems that there are some differences in the clinical picture of eating disorders and their conditions in men and women. Men diagnosed with ED are often labeled as "effeminate" and perceive themselves as such (Bunell, 2010), and this kind of stigma is associated with greater psychopathology, longer disease duration and stronger self-stigma (Murray et al., 2016). The pathology that coexists with ED most often includes depression (slightly more often in women) and disorders associated with using psychoactive substances (mainly in men), personality disorders and anxiety (Cella, Iannaccone, Ascione, Cotrufo, 1997; Woodside, Garfinkel, Lin, Goering, Kaplan, Goldbloom, Kennedy, 2001; Weltzin, Cornella-Carlson, Fitzpatrick, Kennington, Bean, Jefferies, 2012). On the other hand, experiencing depression, shame or anxiety implies a tendency to abuse alcohol and drugs, failure in intimate life and socio-professional problems (Real, 2003, p. 22).

Clinical complications described in men as a result of malnutrition (resulting from ED) include cardiovascular symptoms (e.g. tachycardia), but also atrophy of cortical regions visible in CT imaging of the brain. It is suggested that the critical condition of some patients is the result of e.g. delay in seeking specialist help (Bąk, 2008, p.173). It is therefore suggested that anthropometric measurements should be taken among men to assess their nutritional status. This is due to the fact that although the DSM-5 classification (APA, 2013) has removed the criterion of absence of menstruation for diagnosing anorexia nervosa, in case of girls with ED, absence or irregularity of menstruation often indicates malnutrition; there is no such a clear nutritional status indicator established for male population.

Men are more affected by eating disorders are more likely to be overweight than women before developing the symptoms of the disorder, but the aim of their eating- and body-related actions is not to reduce the overall weight but to achieve the right body proportions (Pope, Phillips, Olivardia, 2000; Bąk, 2008; Striegel-Moore, Rosselli, Kraemer, 2009). This fact contradicts the trend towards achieving leanness, which serves as a basis for diagnostic criteria of ED (Lavender et al., 2017). In Western societies, there are significant differences between the female and male attractiveness patterns due to somatopic differences: the female body should be slim, while the male body should be low in fat but muscular and V-shaped (Pope et al., 2000; Popek, Bażyńska, Misiec, Remberk, Turno, 2011). Thus, men, more than women, focus on the musculature of the body, its association with strength, domination and broadly defined masculinity. On the other hand, women focus more on the corporeality aspects related to adipose tissue (e.g. breasts, buttocks, stomach), as well as their connection to fertility and cultural and biological significance (Bąk, 2008, cf. Murray et al., 2016; Griffiths, Yager, 2019).

However, researchers indicate that maturing boys demonstrate greater satisfaction with their own corporeality compared to young women (Murray et al., 2016). Girls entering puberty (both on time and not on time) are at greater risk of dissatisfaction with their own body, its weight, proportions and overall appearance, whereas boys who enter puberty late are those most likely to communicate a lack of satisfaction with their weight and body size (Rosen, Ramirez, 1998).

There are also differences in the use of compensatory behaviours to regulate body weight and to adjust the proportion of body weight according to gender. In men, these are primarily intensive exercise and fasting, while in women, vomiting and abuse of laxatives and diuretics are more frequently used (Valente et al., 2017). However, according to Bunell (2010), clinicians downplay persistently physical exercise as a potential compensatory activity in the group of men, because physical activity and caring about muscles fitness in our society is considered to be appropriate and healthy. This situation indicates that the image of satisfaction with one's body does not stem directly from biological sex, but from gender roles, which is connected with those mentioned above stereotyping of the image of the male and female body (Jackson, Sullivan i Rostker, 1988; cf: Bąk, 2008, p. 171). Therefore, the attitude to one's own body is a result of the influence of socio-cultural standards created by popular culture and the media, which play a significant role in shaping the view of what the "ideal" male body should look like. Such image, like the ideal of a woman's beauty, can become both a point of reference in the assessment of one's own physicality and attractiveness, and a motivation to change the shape and proportions of one's body (Sharp, Clark, Dunan, Blackwood, Shapiro, 1994; Hobza, Walker, Yakushko, Peugh, 2007).

One of the methods of shaping physique is through intensive and devastating physical exercises which are

potentially addictive, an issue that has been called *anorexia athletica* (Morgan, Scholtz, Lacey, Conway, 2008). One study showed that nearly 90% of teenage boys exercise for weight control (Eisenberg et al., 2012). A British study of 184 long-distance runners conducted in 2001 showed that 29 of them (16%) suffered from eating disorders, 3.8% showed symptoms of *anorexia nervosa*, 1.1.% of *bulimia nervosa*, and 10% of subclinical forms of ED (Eating disorder in sport, downloaded from: [www.ukспорт.gov.uk](http://www.ukспорт.gov.uk) › media › files › resources pdf, on 06.02.2020). In a study conducted in 2004, it was noted that the eating disorder among those playing sports concerns 20.1% of women with ED and 7.7% of men with ED, compared to 0.5% and 9% of men and women in the control group, respectively (Bennet, 2016).

Obsessive engagement in one's appearance including the muscle structure, body weight as well as applying various diets and measures to support building muscle tissue (e.g. anabolic steroids) may predispose men to developing *muscle dysmorphia* (MD) (Czeczor, Brytek-Matera, 2017). It has been shown empirically that this disorder correlates with ED in men (Longobardi, Prino, Angelo, Settanni, 2017), therefore it is included in this study.

Sexual abuse also plays an important role, authors could consider saying something more about sexual abuse in women with ED and making a comparison with ED in men. Research results on this topic are not inconsistent. Smolak and Murnen (2002) showed that the experience of sexual abuse in childhood is associated with a higher risk of developing eating disorders. Brewerton (2007) points out that childhood sexual abuse is significant but non-specific risk factor for eating disorders. Pilarczyk (2016) underlines that experiences of sexual abuse contribute to other disorders and also modify their process, but are not their main cause.

Sexual abuse in the past was experienced by about 30% of men suffering from ED (Connors, Worse, 1993). This data is likely to be underestimated because of the disproportionate amount of shame and stigma that accompanies this type of violence against men, with men also being the source of this violence most often. Eating disorders (especially *anorexia nervosa*) in victims of sexual abuse are a way to deny their sexuality, masculinity and avoid sexual contact. On the other hand, the development of muscle dysmorphia symptoms is used to accentuate the attributes of one's gender (including the strength expressed in developed muscles), which is to protect a man from becoming a victim of this type of abuse once again (Morgan, 2008).

Prior studies have also shown that particularly men with eating disorders also deal with disorders involving the psychoactive substance use; then again, those presenting symptoms of substance dependence often develop abnormal eating behaviours (Dunn, Larimer, Neighbors, 2002). It appears that about 24% of people with a diagnosis of *bulimia nervosa* face alcohol abuse or addiction (Costin, 2007), and about 57% of men with eating disorders show signs of substance abuse, compared to only 28% of women

(American Psychiatric Association, 2006). Unfortunately, due to the tendency for men to have ED underdiagnosed, many of them are only treated for substance abuse, while food and body problems are neglected in their treatment (Costin, 2007).

Sexual orientation plays a vital role in developing symptoms of ED in the male population. A report by Cella et al. (2010) documents that homosexual orientation is associated with increased body dissatisfaction and abnormal eating habits in men, especially those who claim they are not in a romantic relationship. At the same time, it has been shown that a sense of connection to the gay community reduces the likelihood of eating disorder (Waldron et al., 2009). Studies on sexual minorities in a sample of 2733 men (Murray, Rand-Giovannetti, Griffiths, Nagata, 2018) revealed a positive correlation between the use of social media and dissatisfaction with the body, symptoms of eating disorders and the use or intent to use anabolic steroids. It has been documented (like in the case of women) that there are strong links between the use of image-oriented social networking sites (e.g. Instagram) and dissatisfaction with one's muscles and symptoms of eating disorders. Nicholas Ray (2007) also emphasized that young homosexual and bisexual men were much more likely to fast, vomit, take laxatives and dietary preparations for weight control than their heterosexual peers. The research revealed that homosexual and bisexual men are much more likely to have full-blown *bulimia nervosa* and subclinical forms of any eating disorders. On the other hand, Feldman and Meyer (2007) proved that 15% of homosexual and bisexual men, and 4.6% of heterosexual men demonstrated full-blown or less-manifested eating disorders at some point in their lives. Also, transsexual persons were much more likely to report a diagnosis of eating disorders in the year preceding the study (Diemer et al., 2015). This data contradicts the results of studies on bi- and homosexual women, as there are no statistically significant differences in the incidence of eating disorders in their population (Ray, Nicholas, 2007). Although eating disorders are more common in men who identify themselves as homosexual or bisexual, most men with eating disorders are heterosexual (Strother et al., 2012).

## TREATMENT AND THERAPY

Both men and women with ED have similar treatment procedures, but the recent research to have the role of gender recognized in therapy (Bunnel, 2010). Researchers (Bunnel, 2010; MacNeil, Hudson, Leung, 2018) indicate that men do not feel well understood by clinicians. The lack of trained specialists and appropriate treatment conditions for men are the main obstacles in the treatment of them (Weltzin, 2005). Weltzin et al. (2005) point out the need and importance of group therapy programs for men only, to ensure their comfort and safety in revealing their problems (e.g. experiencing violence, including sexual abuse), without being ridiculed, surprised, etc.

It also seems that the demands placed on the male sex by the society and, as a result, internalized by it, can be

extremely burdensome, especially for those who (according to themselves) are unable to meet them (Mahalik, 1999). This significant discrepancy between the pressures and the possibilities of their completion often becomes a cause of frustration for men and consequently contributes to the development of the ED symptoms. Understanding and acceptance of masculinity, therefore, seems to be an essential topic of psychotherapy.

Meanwhile, Kinnaird et al. (2019), based on studies of men undergoing treatment for ED, indicate that they do not want to be defined by their gender. This result contradicts previous reports, which stress the need to target the therapy separately for women and men.

Notwithstanding these contentious ideas, it is recognized that in case of men with eating disorders “the basic conditions for successful treatment are the restoration of normal body weight and proper eating habits” (Maine, Bunnell, 2010, p. 331), because the effects of malnutrition in men appear at lower weight loss than in women (Crisp, Burns, 1990).

In a longitudinal 12-month pilot study on a sample of men with a history of eating disorders (Bardone-Cone et al., 2019) after one year, 15 continued to meet the ED criteria, whereas 7 of them still met the partial recovery criteria, and 5 of them met the completely recovery criteria. Men meeting the criteria for full recovery had a higher body acceptance level than men meeting the criteria for partial recovery or eating disorders. Although these studies need to be continued, given the links between ED in men and dysmorphic disorders, reconstructing the image of one's own body perception in the process of therapy should be considered, as in the case of women with ED.

Optimistically, the prognoses in this group of patients seem to be improving, because e.g. compared to women, men who have been taught to face problems over the course of socialization show greater readiness to confront difficulties during therapy and to cooperate with specialists (Maine, Bunnell, 2010).

## DISCUSSION AND SUMMARY

Although eating disorders are statistically more common in the female population, their quantity is increasing among men, and there are differences in clinical image, symptoms and coexisting gender-specific ED pathology (Valente et al., 2017). The most important features of eating disorders in men include:

1. greater (self)stigmatization than in the case of women, resulting from showing eating disorder symptoms;
2. longer/comprehensive diagnostics (than in the case of women) resulting from incorrect diagnosis and thus implementation of appropriate forms of assistance;
3. increasing percentage of ED in men – athletes, with anxiety personality, obese in childhood or non-heteronormative;
4. high probability of coexisting dysmorphic disorders and substance addiction in men with ED;
5. excessive care for the appearance of body parts, such as the abdomen, the thorax, the arms, the hands, and increased physical activity to create corporeality.

A greater interest in masculine research (in opposition to feminist analysis) dates back to the mid-1990s when the general interest in the functioning of men was followed by research on their health. It is a paradox that in androcentric medicine a reflection on and empirical verification of health determinants in men appeared so late. Despite the involvement of international committees in this issue (World Health Organization, European Commission), it still seems that the problem of socio-cultural determinants of health in the male population is treated marginally thus remaining largely unrecognised. Also in Poland, despite hundreds of publications showing differences in the health situation of citizens considering their sex, the issue of gender specificity of health problems has been rarely addressed and if so, mainly in studies on women, including those published by feminist organizations. The gender-specific context of men's health – apart from sexuality – is generally absent from the Polish literature.

It seems that singling out separate gender-specific criteria for ED diagnosis could facilitate timely diagnosis, and accelerate effective planning and implementation of appropriate interventions. The introduction of gender issues into health care has been primarily concerned with the cultural determinants of physical health and well-being of women and had a feminist basis.

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